

REMARKS

Claims 1-26 and 39-42 are pending. Claims 5-7 and 27-38 are herein cancelled without prejudice. Claims 39-42 are new. Claim 39 depends from claim 17 and support can be found for claim 39 on at least page 7, paragraph 24 of the specification. Claim 40 is original claim 5 written in independent form, and claims 41-42 are original claims 6-7 amended to depend from claim 39 instead of original claim 5. Claims 17, 19, 20, and 25 are herein amended. Applicants submit that the amendments do not add new material to the current Application. Support for some amendments is provided at least by figure 3 of the specification. The other amendments are made due to the amendments to previous claims (e.g., "second interfacial layer" in claim 18 was changed to "first interfacial layer" because "first interfacial layer" was deleted from claim 17) or to fix errors (e.g., "pre-formed" was deleted from claim 19.) No amendment made is related to the statutory requirements of patentability unless expressly stated herein. No amendment made is for the purpose of narrowing the scope of any claims, unless Applicants argue herein that such amendment is made to distinguish over a particular reference or combination of references.

Restriction

Applicants have canceled the nonelected claims in response to the restriction requirement. However, such cancellation does not mean that Applicants agree with the Examiner's contentions of Applicants' claims. For the record, Applicants wish to point out their disagreement with the Examiner's contentions.

First, Applicants disagree with the Examiner's contention that "forming" does not include "bonding." Applicants submit that "forming" includes "bonding."

Second, Applicants disagree with the Examiner's contention that claim 29, as filed, includes "a plurality of discrete elements over the first interfacial layer." Despite the Examiner's disagreement, claim 29 as filed clearly states, "a plurality of discrete element over the first floating gate."

Claims RejectionsClaims 1 and 12-15 are patentable under 35 U.S.C. 102(e) over Lojek.

Applicants respectfully submit claims 1 and 12-15 are patentable under 35 U.S. 102(e) over Lojek (US 6,690,059) because Lojek fails to teach all features of at least independent claim 1, from which claims 12-15 depend. More specifically, Lojek fails to teach "depositing a

plurality of pre-formed discrete element," as stated in claim 1. Lojek does not deposit pre-formed discrete elements. Instead, Lojek deposits ions by implantation into silicon dioxide and from the deposited ions forms nanocrystals. (See column 3, lines 9-24.) Since Lojek does not first form the discrete element and then deposit a plurality of them, Lojek fails to teach "depositing a plurality of pre-formed discrete elements."

Furthermore, claim 1 and its dependencies are patentable over Lojek in all regards because Lojek fails to suggest forming pre-formed discrete elements. Lojek only teaches and then forming nanocrystals in a layer after depositing ions. Thus, Lojek fails to suggest depositing a plurality of pre-formed discrete elements.

In addition, claim 12 is patentable over Lojek for another reason. As explained above, Lojek fails to teach or suggest depositing a plurality of pre-formed discrete elements. One way to achieve this is to use pre-fabricated discrete elements. Since Lojek fails to teach or suggest depositing a plurality of pre-formed discrete elements, Lojek also fails to teach or suggest depositing a plurality of pre-fabricated discrete elements. The Examiner points to FIGs. 1-3, 8 and 9 to support that Lojek teaches depositing a plurality of pre-fabricated discrete elements. In FIGs. 1-3, Lojek illustrates having formed nanocrystals but they are not formed by depositing a plurality of pre-fabricated discrete elements.

For at least the above reasons, claims 1 and 12-15 are patentable over Lojek under 35 U.S.C. 102(e).

Claims 2-4, 8, and 10 are patentable under 35 U.S.C. 103(a) over Lojek in view of Kim.

As discussed above, Lojek fails to teach or suggest all features of independent claim 1 that the Examiner contends Lojek teaches or suggests. More specifically, Lojek fails to teach or suggest depositing a plurality of pre-fabricated discrete elements. Kim also fails to teach or suggest this feature of independent claim 1 because Kim even fails to teach or suggest forming discrete elements. Therefore, Lojek and Kim fail to teach or suggest all features of independent claim 1 and hence, fail to teach or suggest all features of claims 2-4, 8, and 10 which depend from claim 1. For at least this reason, claims 2-4, 8, and 10 are patentable under 35 U.S.C. 103(a) over Lojek in view of Kim.

Claim 9 is patentable under 35 U.S.C. 103(a) over Lojek in view of Forbes.

As discussed above, Lojek fails to teach or suggest all features of independent claim 1 that the Examiner contends Lojek teaches or suggests. More specifically, Lojek fails to teach or suggest depositing a plurality of pre-fabricated discrete elements. Forbes also fails to teach or suggest this feature of independent claim 1 because Forbes even fails to teach or suggest forming discrete elements. Therefore, Lojek and Forbes fail to teach or suggest all features of

independent claim 1 and hence, fail to teach or suggest all features of claim 9 which depends from claim 1. For at least this reason, claim 9 is patentable under 35 U.S.C. 103(a) over Lojek in view of Forbcs.

Claim 11 is patentable under 35 U.S.C. 103(a) over Lojek in view of Arai.

As discussed above, Lojek fails to teach or suggest all features of independent claim 1 that the Examiner contends Lojek teaches or suggests. More specifically, Lojek fails to teach or suggest depositing a plurality of pre-fabricated discrete elements. Arai also fails to teach or suggest this feature of independent claim 1 because Arai even fails to teach or suggest forming discrete elements. Therefore, Lojek and Arai fail to teach or suggest all features of independent claim 1 and hence, fail to teach or suggest all features of claim 11 which depends from claim 1. For at least this reason, claim 11 is patentable under 35 U.S.C. 103(a) over Lojek in view of Arai.

Claim 16 is patentable under 35 U.S.C. 103(a) over Lojek.

As discussed above, Lojek fails to teach or suggest all features of independent claim 1 that the Examiner contends Lojek teaches or suggests. More specifically, Lojek fails to teach or suggest depositing a plurality of pre-fabricated discrete elements. Since Lojek fails to teach or suggest all features of independent claim 1, Lojek also fails to teach or suggest all features of claim 16 which depends from claim 1. For at least this reason, claim 16 is patentable under 35 U.S.C. 103(a) over Lojek.

Claims 17 and 22-24 (and new claim 39) are patentable under 35 U.S.C. 102(e) over Lojek.

Applicants respectfully submit claims 17 and 22-24 are patentable under 35 U.S.C. 102(e) over Lojek because Lojek fails to teach all features of at least independent claim 17. More specifically, Lojek fails to teach, "forming a plurality of discrete elements on the first floating gate, wherein the plurality of discrete elements are in contact with the first floating gate." Lojek does not teach forming discrete elements 23 in contact with the floating gate 19. Instead, Lojek teaches having at least the tunnel barrier layer 21 between the discrete elements 23 and the floating gate 19. For at least this reason, Lojek fails to teach all features of independent claim 17 and its dependencies. Thus, claim 17 and its dependencies (especially claims 22-24) are patentable over Lojek under 35 U.S.C. 102(e).

Furthermore, claim 17 and its dependencies are patentable over Lojek in all regards because Lojek fails to suggest forming discrete elements in contact with a floating gate. Lojek

only teaches depositing discrete elements over a floating gate with at least a tunnel barrier layer 21 in between. Thus, Lojek fails to suggest forming discrete elements in contact with a floating gate.

New claim 39 is patentable over Lojek in all regards for at least the same reasons as claim 17.

Claims 18-21 are patentable under 35 U.S.C. 103(a) over Lojek in view of Kim.

As discussed above, Lojek fails to teach or suggest all features of independent claim 17 that the Examiner contends Lojek teaches or suggests. More specifically, Lojek fails to teach or suggest forming a plurality of discrete elements on the first floating gate, wherein the plurality of discrete elements are in contact with the first floating gate. Kim also fails to teach or suggest this feature of independent claim 17 because Kim even fails to even teach or suggest forming discrete elements. Therefore, Lojek and Kim fail to teach or suggest all features of independent claim 17 and hence, fail to teach or suggest all features of claims 18-21 which depend from claim 1. For at least this reason, claims 18-21 are patentable under 35 U.S.C. 103(a) over Lojek in view of Kim.

Claim 25 is patentable under 35 U.S.C. 103(a) over Lojek in view of Batra.

As discussed above, Lojek fails to teach or suggest all features of independent claim 17 that the Examiner contends Lojek teaches or suggests. More specifically, Lojek fails to teach or suggest forming a plurality of discrete elements on the first floating gate, wherein the plurality of discrete elements are in contact with the first floating gate. Batra also fails to teach or suggest this feature of independent claim 17. Batra teaches forming discrete elements on insulating layers (e.g., gate oxide layer 2 in FIG. 1). Batra fails to even teach or suggest forming discrete elements in contact with a floating gate. Therefore, Lojek and Batra fail to teach or suggest all features of independent claim 17 and hence, fail to teach or suggest all features of claim 25 which depends from claim 1. For at least this reason, claim 25 is patentable under 35 U.S.C. 103(a) over Lojek in view of Kim.

Claim 26 is patentable under 35 U.S.C. 103(a) over Lojek.

As discussed above, Lojek fails to teach or suggest all features of independent claim 17 that the Examiner contends Lojek teaches or suggests. More specifically, Lojek fails to teach or suggest forming a plurality of discrete elements on the first floating gate, wherein the plurality of discrete elements are in contact with the first floating gate. Since Lojek fails to teach or suggest all features of independent claim 17, Lojek also fails to teach or suggest all features of claim 26,

which depends from claim 17. For at least this reason, claim 26 is patentable under 35 U.S.C. 103(a) over Lojek.

Claims 40-42 are allowable.

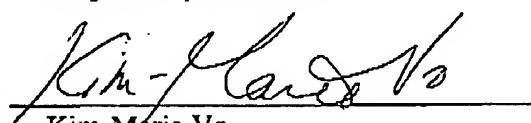
The Examiner objected to original claims 5-7 and stated that if written in independent form including all the limitations of the base claim and intervening claims, if any, claims 5-7 would be allowable. Claim 40 is original claim 5 written in independent form (including all the limitations of the base claim and intervening claims, if any) and claims 41-42 are original claims 6-7 rewritten to depend from claim 40. Therefore, claims 40-42 are allowable.

Although Applicants may disagree with additional statements made by the Examiner in reference to the claims and the cited references, Applicants are not discussing all these statements in the current Office Action since reasons for the patentability of each pending claim is provided without addressing these statements. Therefore, Applicants reserve the right to address these statements at a later time, if necessary. Applicants thank the Examiner for pointing out allowable subject matter, but currently believe all pending claims are patentable and therefore earnestly solicit allowance of all pending claims. Please contact Applicant's practitioner listed below if there are any issues.

If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 503079, Freescale Semiconductor, Inc.

Respectfully submitted,

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